

Features

- Low On-Resistance
- Low threshold
- Fast switching speed
- Low gate drive

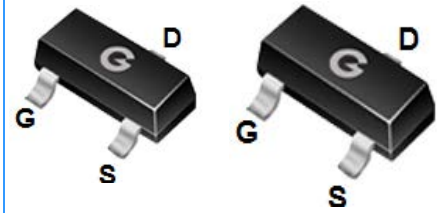
HF

Typical Applications

- Motor control
- Disconnect switches
- DC-DC converters
- Power management functions

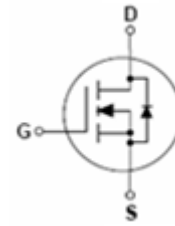
Mechanical Data

- Case: SOT-23, SOT-23-3L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



BL02N06C
SOT-23

BL02N06C-3L
SOT-23-3L



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL02N06C	SOT-23	3000pcs / Tape & Reel	02N06
BL02N06C-3L	SOT-23-3L	3000pcs / Tape & Reel	02N06

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V _{DSS}	60	V
Gate-to-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current	I _D	2	A
Pulsed Drain Current	I _{DM}	8	A

Thermal Characteristics

Parameter		Symbol	Value	Unit
Power Dissipation	SOT-23	P_D	0.35	W
	SOT-23-3L		0.35	
Thermal Resistance Junction-to-Air	SOT-23	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
	SOT-23-3L		357	
Thermal Resistance Junction-to-Lead	SOT-23	$R_{\theta JL}$	214	$^{\circ}\text{C/W}$
	SOT-23-3L		214	
Thermal Resistance Junction-to-Case	SOT-23	$R_{\theta JC}$	180	$^{\circ}\text{C/W}$
	SOT-23-3L		180	
Operating Junction Temperature Range		T_J	-55 ~ +150	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Electrical Characteristics (@ $T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 60V, V _{GS} = 0V	-	-	1000	nA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
On Characteristics *1						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = 10V, I _D = 2A	-	-	115	mΩ
		V _{GS} = 4.5V, I _D = 2A	-	-	140	
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250uA	0.8	1	2	V
g _{FS}	Forward Transconductance	V _{DS} = 15V, I _D = 2A	-	4.9	-	S
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = 40V f = 1.0MHz	-	520	-	pF
C _{OSS}	Output Capacitance		-	26	-	
C _{RSS}	Reverse Transfer Capacitance		-	15	-	
Q _G	Total Gate-Charge	V _{GS} = 10V	-	15.5	-	nC
Q _{GS}	Gate to Source Charge	V _{DS} = 30V	-	1.6	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = 2A	-	1.7	-	
t _{d(ON)}	Turn-on Delay Time	V _{GS} = 10V V _{DD} = 30V I _D = 2A R _G = 6Ω	-	1.95	-	ns
t _r	Turn-on Rise Time		-	3.5	-	
t _{d(OFF)}	Turn-Off Delay Time		-	8.2	-	
t _f	Turn-Off Fall Time		-	4.6	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _S = 2A, V _{GS} = 10V	-	-	2	V

Note 1: Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

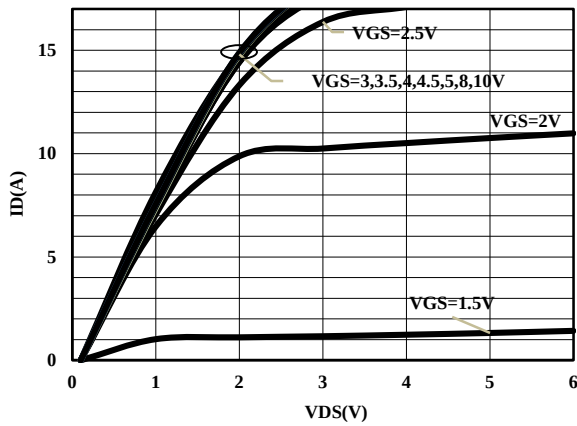


Fig.1- On-Region Characteristics

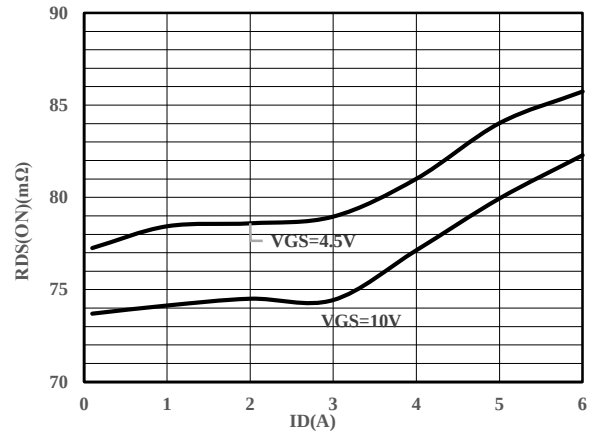


Fig.2-On-Resistance vs. Drain Current
and Gate Voltage

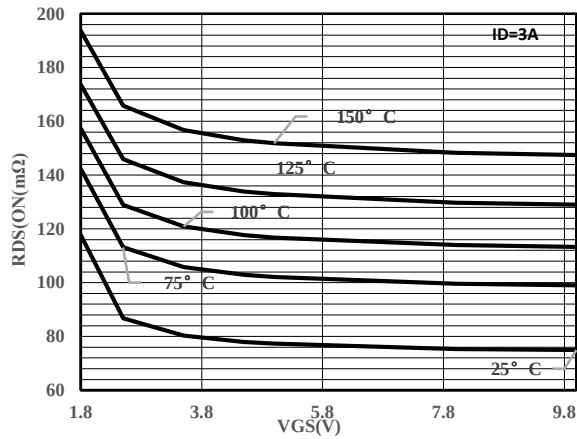


Fig.3-On-Resistance vs. Gate-Source Voltage

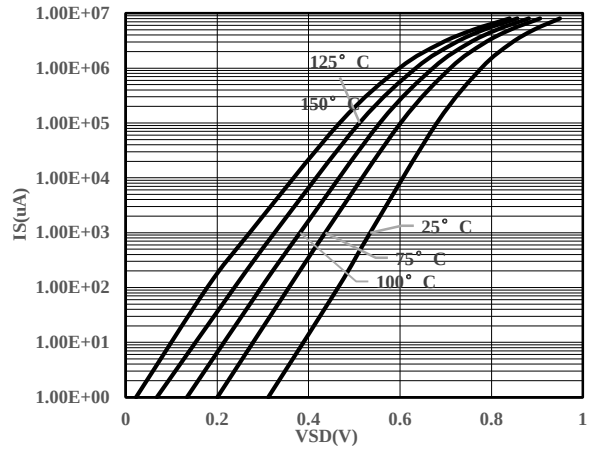


Fig.4- Body-Diode Characteristics

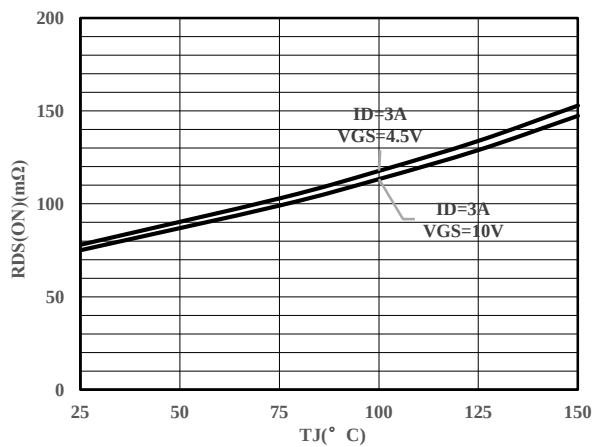


Fig.5-On-Resistance vs. Junction Temperature

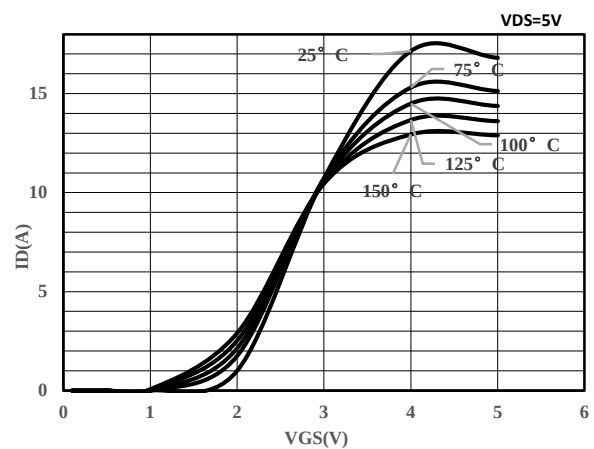


Fig.6-Transfer Characteristics

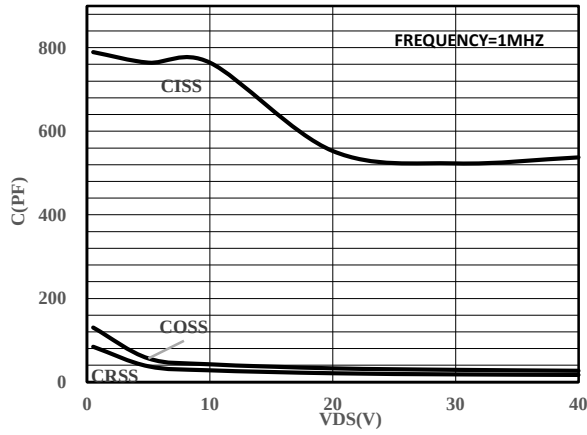


Fig.7-Capacitance Characteristics

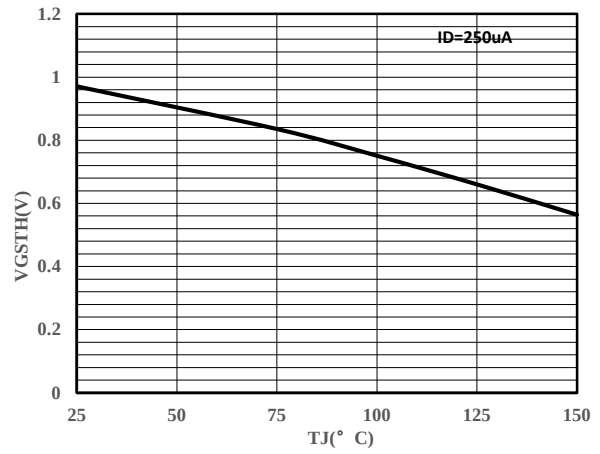


Fig.8- Gate Voltage vs. Junction Temperature

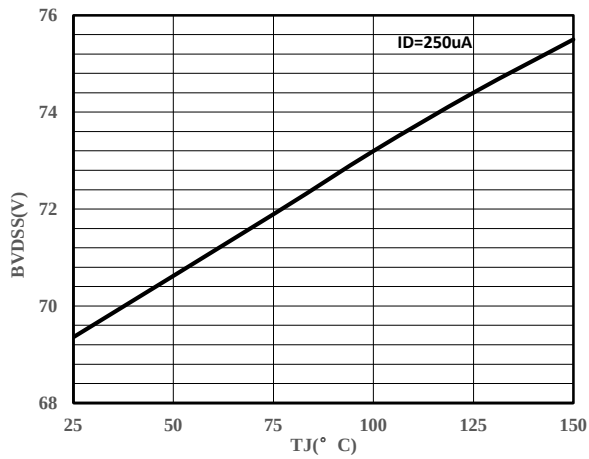
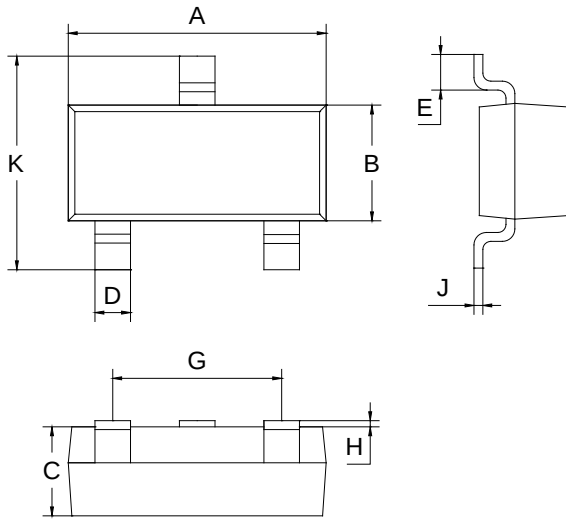
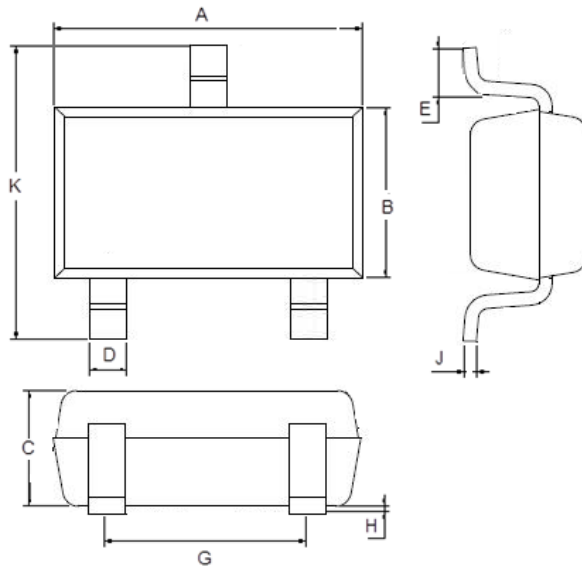


Fig.9- Drain-Source vs. Junction Temperature

Package Outline Dimensions (Unit: mm)



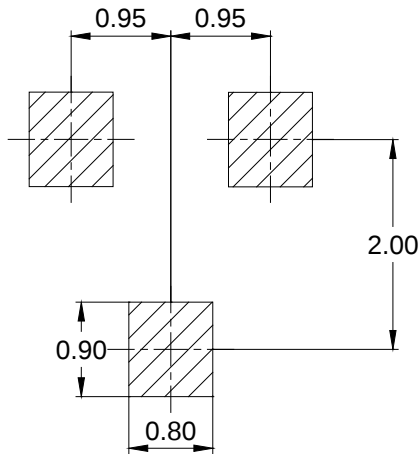
SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60



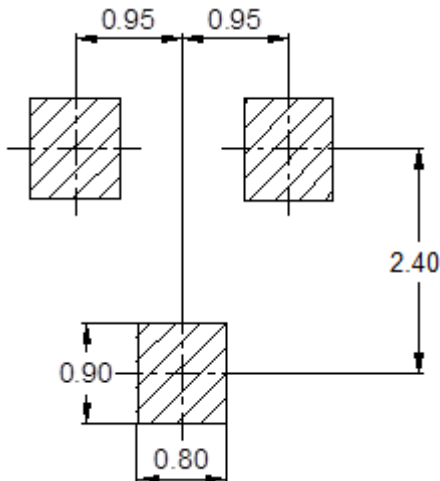
SOT-23-3L		
Dimension	Min.	Max.
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	1.80	2.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)

SOT-23



SOT-23-3L



IMPORTANT NOTICE

Changzhou Galaxy Century Microelectronics (GME) reserves the right to make changes without further notice to any product information (copyrighted) herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.